(OR: 0.816, CI: 0.683–0.974) was seen less in those with itch sensitivity ($P < 0.05$).
Conclusion: The absence of itch sensitivity may increase the risk of acquiring the disease and add to the severity and that a strong local immune response may prevents or limit the manifestations of a systemic infection.

Free Paper Presentation 8: Parasitic and GI Infections

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Convention Hall 2C

PL-008 Systemic leishmaniasis are inhibited by acetylsalicylic acid via nitric oxide pathway in *Leishmania* major infected susceptible Balb/c mice

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Objectives: Leishmaniasis is a zoonotic disease caused by *Leishmania* parasites ranging from lesion to severe cutaneous/visceral leishmaniasis. Nitric oxide as a free radical released during an inflammatory response and involved in the microbicidal activity of macrophages. Acetyl salysilic acid inhibits inflammatory reactions but little is known about its effects on CL therapy. The purpose of this study was to evaluate antileishmanial effects of ASA via NO pathway in susceptible Balb/c mice infected with *L. major*.
Methods: Experimental leishmaniasis was initiated by injection of *Leishmania* promastigotes into mice. ASA was inoculated orally after lesion appearance using gavages once a day up to 13 weeks. The development of lesion was determined weekly and animals were humanely killed and target tissues were removed, weighted and their impression smears prepared. Griess microassay was applied for measurement of NO in plasma and target organs.
Results: Results showed ASA increased NO production in plasma of both naive and leishmania groups. A sharp decline was observed in proliferation of amastigotes inside MQ. Contrary, ASA reduced lesion size inhibited leishmania visceralisation in spleen lymph node and decreased routine hepato/splenomegaly. However it had some negative side effect on survival rate and body weight. Results indicated some antileishmanial effects of ASA by alterations of NO as immunomodulatory factor in *L. major* infected Balb/c mice.
Conclusion: ASA presented its ability to elevate NO concentration in plasma during systemic leishmaniasis in mice and it decreased parasite visceralization in target organs as well as declining its proliferation inside macrophages with less effect on lesion size. It presented no significant effects on hepato/splenomegaly and decrease survival rate and body weight. It is indicated ASA may be applied for inhibition of systemic leishmaniasis via nitric oxide pathway on Balb c mice infected with *L. major*, however more studies are required to clarify this concept.

OL-036 Prevalence of canine scabies in Korean stray dogs

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Background: Recently the number of stray dog is proportionate with the increase of the number of the companion dog. *Sarcoptes scabiei* var. *canis*, causing scabies, is one of the most important canine zoonotic arthropod in Korea and around the world. Thus, we have tried to know the prevalence of canine scabies in the stray dog in Korea.
Methods: A total of 565 stray dogs were collected from the rescue centers all over the country. They were grouped with euthanasia or natural death and examined for the sex and age estimated by dental formula. To identify the lesions, the whole body was grossly examined and tested pathologically.
Results: Thirty-two (5.66%) of 565 dogs were diagnosed to have canine scabies. Demodiciosis and pediculosis also detected in seven cases, respectively. Dogs from urban areas had fewer scabies (0.62%) than that of rural areas (12.5%). Prevalence of scabies in male dogs and female dogs was no difference as 5.96% and 5.25%. Euthanasia group showed higher prevalence (6.48%) than natural death group (2.44%) in scabies. Old dogs over five years showed lower infestration (1.82%) in scabies. In histopathological examination, there were mites in the burrows formed in the subcorneal space. Acanthosis, hyperkeratosis with crust, and vascular dilatiation were main findings.
Conclusion: One hundred thirteen (20%) of 565 stray dogs were diagnosed to have skin disease. Among them, canine scabies is the most prominent ectoparasite as 5.66%. With previous reports on human infection in Korea, canine scabies must be regarded as the important zoonotic canine skin disease. Accordingly, for the human and canine hygiene it is imperative that stray dogs with skin problems are segregated and tested for parasites to treat properly as soon as arriving at rescue shelter.

OL-037 Effect of treatment with antifibrotic drugs in combination with PZQ in immunized *Schistosoma mansoni* infected murine model

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Background: The main problem in schistosomal hepatic morbidity is fibrosis and extensive scarring induced by living eggs. In this study, we tried to study the effect of treatment using antihelminthic drug (PZQ) and/or antifibrotic drugs (PTX and silymarin) in combination with immunization.
Methods: The parasitological parameters, the dynamics of serum-specific immunoglobulins and splenic cytokines associated with changes in granuloma diameter were assessed. Naïve mice were immunized intravenously with 10 ug of SEA in three doses at 2 days intervals 6 weeks before infection. Animals were infected by tail immersion with 100 cercariae and divided into several groups. Three groups were treated with PZQ, PTX or silymarin administered alone. Another two groups were treated with PZQ combined with PTX or silymarin. All treated animals and respective controls were sacrificed 12 weeks post infection.
Results: Immunization did not affect worm reduction, but slight decrease in granuloma diameter, increase in immunoglobulins and cytokines was observed. Reduction in worm burden was associated with reduction in ova count and changes in oogram pattern which were mainly due to PZQ treatment. Increasing reduction in granuloma

diameter, elevation of immunogloulins and cytokines levels were observed in the groups treated with PZQ alone or cmbined with PTX or silymarin.
In conclusion, in this study, treatment with PZQ complemented with immunization resulted in significant reduction of parasitological parameters and rise of specific Igs. Addition of antifibrotic drugs PTX or silymarin to PZQ, potentiated an antipathology effect which minimized and ameliorated liver fibrosis by inhibition of HSC activation and accentuation of the effect of suppressor Treg cells.

OL-038 A novel recombinant subunit vaccine for human enterovirus 71

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Objectives: Hand-foot-and-mouth disease (HFMD) is a highly infectious disease which is mainly caused by enterovirus 71 (EV71) in China. Millions of children have been infected by this virus in recent years, and the death toll is heavy. Our study was focused on mapping EV71 specific linear neutral epitopes and developing of new recombinant subunit vaccine for HFMD.
Methods: The study included sera from 40 individuals at different stages of disease. Twelve synthetic peptides designed from EV71 VP1 protein were used to determine antibody titers in an indirect enzyme-linked immunoassay. The peptides had high antibody titers were chosen and expressed in *E. coli* as a whole fusion protein. The fusion protein was used to immunize Balb/c mice and 2 weeks later the mice were sacrificed and collected the sera for neutralization activity test to EV71.
Results: Four peptides of the twelve peptides had high antibody titers in patient sera. Mice sera which were immunized by the fusion protein of the four peptides had neutral titer of 1:16 to 1:32.
Conclusion: The new recombinant fusion protein had a good neutralization effect to EV71 virus and contained the neutralization epitope(s). This protein is a candidate for EV71 vaccine.
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OL-039 Potential protection of OPV vaccination against EV71 induced HFMD

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Objective: Human Entervirus 71 (EV71) induced Hand Foot and Mouth Disease (HFMD) is a common disease with high morbidity in infants. Our study is to find if Oral Poliovirus Vaccine (OPV) immunization has any potential to protect against EV71 infection and HFMD.
Methods: We collected data from 153 patients in mild and sever group and selected 447 healthy children as controls. We compared the two disease groups with the control group with respect to OPV immunization schedule by χ^2 test to determine whether immunization had any effect on the EV71 infection and disease development.
Results: Children who had received the recommended OPV immunization faced a lower risk of EV71 infection than those whose didn't. The low ratio of regular to irregular OPV immunization among HFMD cases was mostly due to the severe group with P value of less than 0.0001, which indicated a significant difference in the proportion of children who had received the recommended OPV immunization between the severe group and the control group.
Conclusion: We found that regular OPV vaccination had potential protection against EV71 induced HFMD, especially for severe disease development. Our study suggests that OPV vaccination is an alternative approach in controlling EV71 induced HFMD.

Table 1. Comparison of recommended OPV immunization among mild, severe and control groups in the Fuyang HFMD outbreaks of 2008

	No. (ratio)	Risk ratio (95% CI)	Odds ratio (95% CI)	P value
Controls (n = 447)	317 (70.9%)			
All cases (n = 153)	88 (57.5%)	0.811 (0.699, 0.941)	0.555 (0.380, 0.812)	0.0023
Mild (n = 106)	68 (64.2%)	0.905 (0.775, 1.055)	0.734 (0.470, 1.147)	0.17
Severe (n = 47)	20 (42.6%)	0.600 (0.428, 0.841)	0.304 (0.165, 0.561)	<0.0001
Severe vs. Mild		0.663 (0.462, 0.952)	0.414 (0.205, 0.835)	0.013

OL-040 *Helicobacter pylori* induces C57BL/6 mice gastric adenocarcinoma and enhances VEGF expression via p38MAPK/COX-2 pathway

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Background: Angiogenesis is closely related with the incidence and development of gastric cancer, but the role of angiogenesis is still unknown in *Helicobacter pylori* (*H. pylori*)-induced gastric cancer. This study is to investigate the possible mechanism of gastric cancer induced by *H. pylori* infection from the perspective of angiogenesis.
Methods: C57BL/6 mouse gastric cancer model induced by *H. pylori* infected was established by gavage with *H. pylori*, and mice were divided into 2 groups: Control group and Model group. After 72 weeks, Microvessel density (MVD) in gastric mucosa was detected with Evision immunohistochemical method. Vascular endothelial growth factor (VEGF), Cyclooxygenase 2 (COX-2) mRNA and protein expression were evaluated by real-time fluorogenic quantitative polymerase chain reaction (RFQ-PCR) and immunohistochemical method, and the correlation between COX-2 and VEGF were analyzed. Human gastric MKN45 cancer cells were infected with *H. pylori*, and the expression of VEGF and COX-2 mRNA, protein were evaluated by RFQ-PCR, Elisa and western blot. After inhibiting COX-2 expression and blocking p38MAPK pathway with COX-2 inhibitor NS398 and p38MAPK inhibitor SB203580, VEGF expression was evaluated.
Result: This study reported C57BL/6 mouse gastric adenocarcinoma model chronically colonized by *H. pylori* is established successfully and *H. pylori* infection could increase gastric mucosa MVD, and the expression of COX-2 mRNA, protein and VEGF mRNA, protein in Model group were obviously increased than Control group. COX-2 mRNA and protein was positively correlated to VEGF mRNA and protein. The VEGF and COX-2 mRNA, proteins expression levels increased remarkably with *H. pylori* stimulation in the MKN45 gastric cancer cells. *H. pylori* also stimulated phosphorylation of p38MAPK, and the expression levels of VEGF and COX-2 were suppressed with SB203580 treatment and VEGF were suppressed with NS398 treatment.
Conclusion: *Helicobacter pylori* induces C57BL/6 mice gastric adenocarcinoma and enhances VEGF expression via p38MAPK /COX-2 pathway.